Sub A7

SEQUENCE LISTING

<110> Kimble, Judith E
Blelloch, Robert H

<120> Agent and Method for Modulating Cell Migration

<130> 960296.95386

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<151> 1998-05-29

<150> 60/129023
<151> 1999-04-13

<160> 2

<170> PatentIn Ver. 2.0

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Ser Gly Thr Ile Ser Glu Phe Ser Ser Asp Val Leu Phe Ser Arg Ala
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aag tac tca ggt gtg cca gtg cat cac agt cga tgg cgt caa gac gcc 192
Lys Tyr Ser Gly Val Pro Val His His Ser Arg Trp Arg Gln Asp Ala
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Gly Ile His Val Ile Asp Ser His His Ile Val Arg Arg Asp Ser Tyr
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Gly Arg Arg Gly Lys Arg Asp Val Thr Ser Thr Asp Arg Arg Arg Arg
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Leu Gln Gly Val Ala Arg Asp Cys Gly His Ala Cys His Leu Arg Leu
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Arg Ser Asp Asp Ala Val Tyr Ile Val His Leu His Arg Trp Asn Gln
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Ile Pro Asp Ser His Asn Lys Ser Val Pro His Phe Ser Asn Ser Asn
130 135 140

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Phe Ala Pro Met Val Leu Tyr Leu Asp Ser Glu Glu Glu Val Arg Gly
145 150 155 160

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Gly Met Ser Arg Thr Asp Pro Asp Cys Ile Tyr Arg Ala His Val Lys
165 170 175

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Gly Val His Gln His Ser Ile Val Asn Leu Cys Asp Ser Glu Asp Gly
180 185 190

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Leu Tyr Gly Met Leu Ala Leu Pro Ser Gly Ile His Thr Val Glu Pro
195 200 205

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Ile Ile Ser Gly Asn Gly Thr Glu His Asp Gly Ala Ser Arg His Arg
210 215 220

Sub A 17

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225 230 235 240

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His Leu Asn Ser Thr Ser Val Asn Glu Thr Glu Thr Thr Val Ala Thr
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260 265 270

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Arg Ala Ala Asn Ser Trp Asp His Tyr Val Glu Val Leu Val Val Ala
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Asp Thr Lys Met Tyr Glu Tyr His Gly Arg Ser Leu Glu Asp Tyr Val
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Val Gln His His Asp Val Ala Ile Leu Leu Thr Arg Lys Asp Ile Cys
370 375 380

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Sub A17

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Ser Ala Ala Phe Thr Ile Ala His Glu Leu Gly His Val Phe Ser Ile
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Pro His Asp Asp Glu Arg Lys Cys Ser Thr Tyr Met Pro Val Asn Lys
435 440 445

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Asp Ala His Gln Gln Cys Lys Phe Val Phe Gly Pro Ala Ser Glu Leu
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Cys Pro Tyr Met Pro Thr Cys Arg Arg Leu Trp Cys Ala Thr Phe Tyr
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625 630 635 640

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645 650 655

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660 665 670

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690 695 700

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Lys Val Val Asp Gly Thr Pro Cys Asp Arg Asn Gly Asp Asp Ile Cys
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725 730 735

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740 745 750

Sub A1

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770 775 780

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Gln Lys Gly Tyr Asn Asn Met Lys Glu Asp Asp Asn Tyr Leu Ser Leu
785 790 795 800

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835 840 845

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Ser Asp Ile Tyr Val His Val Leu Ser Val Gly Ser His Pro Pro Asp
850 855 860

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885 890 895

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Leu Asp Met Ser Thr His Arg Gln Ser His Asp Arg Asn Cys Gln Asn
915 920 925

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Sub A17

Val Leu Lys Pro Lys Gln Ala Thr Arg Met Cys Asn Ile Asp Cys Ser
930 935 940

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Tyr Gly Glu Trp Thr Ser Cys Ser Glu Thr Cys Gly Ser Asn Gly Lys
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His Leu Asp Lys Glu Val Ser Thr Arg Asn Cys Arg Leu Arg Asp Cys
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1745 1750 1755 1760

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1780 1785 1790

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1795 1800 1805

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1810 1815 1820

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1845 1850 1855

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Ser Gln Thr Cys Glu Leu Asn Pro Cys Asp Ser Glu Phe Lys Trp Ser
1860 1865 1870

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Phe Gly Pro Trp Gly Glu Cys Ser Lys Asn Cys Gly Gln Gly Ile Arg
1875 1880 1885

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Arg Arg Arg Val Lys Cys Val Ala Asn Asp Gly Arg Arg Val Glu Arg
1890 1895 1900

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Val Lys Cys Thr Thr Lys Lys Pro Arg Arg Thr Gln Tyr Cys Phe Glu
1905 1910 1915 1920

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Arg Asn Cys Leu Pro Ser Thr Cys Gln Glu Leu Lys Ser Gln Asn Val
1925 1930 1935

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Lys Ala Lys Asp Gly Asn Tyr Thr Ile Leu Leu Asp Gly Phe Thr Ile
1940 1945 1950

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1955 1960 1965

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1985 1990 1995 2000

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2005 2010 2015

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Lys Val Arg Ile Asp Leu Leu Asn Arg Lys Phe His Leu Ala Asp Tyr
2020 2025 2030

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Thr Phe Ala Lys Arg Glu Tyr Gly Val His Val Pro Tyr Gly Thr Ala
2035 2040 2045

ggt gat tgc tac agt atg aaa gat tgt cca cag gga ata ttc tca att 6192
Gly Asp Cys Tyr Ser Met Lys Asp Cys Pro Gln Gly Ile Phe Ser Ile
2050 2055 2060

gat tta aaa tct gct ggt ctg aaa tta gtt gac gat ctg aat tgg gag 6240
Asp Leu Lys Ser Ala Gly Leu Lys Leu Val Asp Asp Leu Asn Trp Glu
2065 2070 2075 2080

gat caa ggt cat cga aca tcc tct cga atc gat cgt ttt tat aac aat 6288
Asp Gln Gly His Arg Thr Ser Ser Arg Ile Asp Arg Phe Tyr Asn Asn
2085 2090 2095

gca aaa gtt att ggt cac tgt ggt ggt ttt tgt gga aaa tgc tct cct 6336
Ala Lys Val Ile Gly His Cys Gly Gly Phe Cys Gly Lys Cys Ser Pro
2100 2105 2110

gag cgg tac aaa gga cta atc ttt gaa gtt aat aca aaa tta tta aat 6384
Glu Arg Tyr Lys Gly Leu Ile Phe Glu Val Asn Thr Lys Leu Leu Asn
2115 2120 2125

cat gtg aaa aat ggt gga cac att gat gat gaa ttg gat gat gat ggt 6432
His Val Lys Asn Gly Gly His Ile Asp Asp Glu Leu Asp Asp Asp Gly
2130 2135 2140

ttc tct ggt gac atg gat taa ttttttcgat acctaaaagt gtcaaaatct 6483
Phe Ser Gly Asp Met Asp
2145 2150

cgtatgaatc tctacttctc tggtctctta tttcaagttt ttgattcttt tctttttttt 6543

agtttttaat agcattactt cgaatttatt gtcattccct caatcaccta acactaggtt 6603

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<212> PRT
<213> Caenorhabditis elegans

<400> 2

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Ala Leu Ile Leu Leu Val Val Cys Leu Val Tyr Ala Leu Gln Ser Gly
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Ser Gly Thr Ile Ser Glu Phe Ser Ser Asp Val Leu Phe Ser Arg Ala
35 40 45

Lys Tyr Ser Gly Val Pro Val His His Ser Arg Trp Arg Gln Asp Ala
50 55 60

Gly Ile His Val Ile Asp Ser His His Ile Val Arg Arg Asp Ser Tyr
65 70 75 80

Gly Arg Arg Gly Lys Arg Asp Val Thr Ser Thr Asp Arg Arg Arg Arg
85 90 95

Leu Gln Gly Val Ala Arg Asp Cys Gly His Ala Cys His Leu Arg Leu
100 105 110

Arg Ser Asp Asp Ala Val Tyr Ile Val His Leu His Arg Trp Asn Gln
115 120 125

Ile Pro Asp Ser His Asn Lys Ser Val Pro His Phe Ser Asn Ser Asn
130 135 140

Phe Ala Pro Met Val Leu Tyr Leu Asp Ser Glu Glu Glu Val Arg Gly
145 150 155 160

Gly Met Ser Arg Thr Asp Pro Asp Cys Ile Tyr Arg Ala His Val Lys
165 170 175

Gly Val His Gln His Ser Ile Val Asn Leu Cys Asp Ser Glu Asp Gly
180 185 190

Leu Tyr Gly Met Leu Ala Leu Pro Ser Gly Ile His Thr Val Glu Pro
195 200 205

Ile Ile Ser Gly Asn Gly Thr Glu His Asp Gly Ala Ser Arg His Arg
210 215 220

Gln His Leu Val Arg Lys Phe Asp Pro Met His Phe Lys Ser Phe Asp
225 230 235 240

His Leu Asn Ser Thr Ser Val Asn Glu Thr Glu Thr Thr Val Ala Thr
245 250 255

Trp Gln Asp Gln Trp Glu Asp Val Ile Glu Arg Lys Ala Arg Ser Arg
260 265 270

Arg Ala Ala Asn Ser Trp Asp His Tyr Val Glu Val Leu Val Val Ala
275 280 285

Asp Thr Lys Met Tyr Glu Tyr His Gly Arg Ser Leu Glu Asp Tyr Val
290 295 300

Leu Thr Leu Phe Ser Thr Val Ala Ser Ile Tyr Arg His Gln Ser Leu
305 310 315 320

Arg Ala Ser Ile Asn Val Val Val Val Lys Leu Ile Val Leu Lys Thr
325 330 335

Glu Asn Ala Gly Pro Arg Ile Thr Gln Asn Ala Gln Gln Thr Leu Gln
340 345 350

Asp Phe Cys Arg Trp Gln Gln Tyr Tyr Asn Asp Pro Asp Asp Ser Ser
355 360 365

Val Gln His His Asp Val Ala Ile Leu Leu Thr Arg Lys Asp Ile Cys
370 375 380

Arg Ser Gln Gly Lys Cys Asp Thr Leu Gly Leu Ala Glu Leu Gly Thr
385 390 395 400

Met Cys Asp Met Gln Lys Ser Cys Ala Ile Ile Glu Asp Asn Gly Leu
405 410 415

Ser Ala Ala Phe Thr Ile Ala His Glu Leu Gly His Val Phe Ser Ile
420 425 430

Pro His Asp Asp Glu Arg Lys Cys Ser Thr Tyr Met Pro Val Asn Lys
435 440 445

Asn Asn Phe His Ile Met Ala Pro Thr Leu Glu Tyr Asn Thr His Pro
450 455 460

Trp Ser Trp Ser Pro Cys Ser Ala Gly Met Leu Glu Arg Phe Leu Glu
465 470 475 480

Asn Asn Arg Gly Gln Thr Gln Cys Leu Phe Asp Gln Pro Val Glu Arg
485 490 495

Arg Tyr Tyr Glu Asp Val Phe Val Arg Asp Glu Pro Gly Lys Lys Tyr
500 505 510

Asp Ala His Gln Gln Cys Lys Phe Val Phe Gly Pro Ala Ser Glu Leu
515 520 525

Cys Pro Tyr Met Pro Thr Cys Arg Arg Leu Trp Cys Ala Thr Phe Tyr
530 535 540

Gly Ser Gln Met Gly Cys Arg Thr Gln His Met Pro Trp Ala Asp Gly
545 550 555 560

Thr Pro Cys Asp Glu Ser Arg Ser Met Phe Cys His His Gly Ala Cys
565 570 575

Val Arg Leu Ala Pro Glu Ser Leu Thr Lys Ile Asp Gly Gln Trp Gly
580 585 590

Asp Trp Arg Ser Trp Gly Glu Cys Ser Arg Thr Cys Gly Gly Gly Val
595 600 605

Gln Lys Gly Leu Arg Asp Cys Asp Ser Pro Lys Pro Arg Asn Gly Gly
610 615 620

Lys Tyr Cys Val Gly Gln Arg Glu Arg Tyr Arg Ser Cys Asn Thr Gln
625 630 635 640

Glu Cys Pro Trp Asp Thr Gln Pro Tyr Arg Glu Val Gln Cys Ser Glu
645 650 655

Phe Asn Asn Lys Asp Ile Gly Ile Gln Gly Val Ala Ser Thr Asn Thr
660 665 670

His Trp Val Pro Lys Tyr Ala Asn Val Ala Pro Asn Glu Arg Cys Lys
675 680 685

Leu Tyr Cys Arg Leu Ser Gly Ser Ala Ala Phe Tyr Leu Leu Arg Asp
690 695 700

Lys Val Val Asp Gly Thr Pro Cys Asp Arg Asn Gly Asp Asp Ile Cys
705 710 715 720

Val Ala Gly Ala Cys Met Pro Ala Gly Cys Asp His Gln Leu His Ser
725 730 735

Thr Leu Arg Arg Asp Lys Cys Gly Val Cys Gly Gly Asp Asp Ser Ser
740 745 750

Cys Lys Val Val Lys Gly Thr Phe Asn Glu Gln Gly Thr Phe Gly Tyr
755 760 765

Asn Glu Val Met Lys Ile Pro Ala Gly Ser Ala Asn Ile Asp Ile Arg
770 775 780

Gln Lys Gly Tyr Asn Asn Met Lys Glu Asp Asp Asn Tyr Leu Ser Leu
785 790 795 800

Arg Ala Ala Asn Gly Glu Phe Leu Leu Asn Gly His Phe Gln Val Ser
805 810 815

Leu Ala Arg Gln Gln Ile Ala Phe Gln Asp Thr Val Leu Glu Tyr Ser
820 825 830

Gly Ser Asp Ala Ile Ile Glu Arg Ile Asn Gly Thr Gly Pro Ile Arg
835 840 845

Ser Asp Ile Tyr Val His Val Leu Ser Val Gly Ser His Pro Pro Asp
850 855 860

Ile Ser Tyr Glu Tyr Met Thr Ala Ala Val Pro Asn Ala Val Ile Arg
865 870 875 880

Pro Ile Ser Ser Ala Leu Tyr Leu Trp Arg Val Thr Asp Thr Trp Thr
885 890 895

Glu Cys Asp Arg Ala Cys Arg Gly Gln Gln Ser Gln Lys Leu Met Cys
900 905 910

Leu Asp Met Ser Thr His Arg Gln Ser His Asp Arg Asn Cys Gln Asn
915 920 925

Val Leu Lys Pro Lys Gln Ala Thr Arg Met Cys Asn Ile Asp Cys Ser
930 935 940

Thr Arg Trp Ile Thr Glu Asp Val Ser Ser Cys Ser Ala Lys Cys Gly
945 950 955 960

Ser Gly Gln Lys Arg Gln Arg Val Ser Cys Val Lys Met Glu Gly Asp
965 970 975

Arg Gln Thr Pro Ala Ser Glu His Leu Cys Asp Arg Asn Ser Lys Pro
980 985 990

Ser Asp Ile Ala Ser Cys Tyr Ile Asp Cys Ser Gly Arg Lys Trp Asn
995 1000 1005

Tyr Gly Glu Trp Thr Ser Cys Ser Glu Thr Cys Gly Ser Asn Gly Lys
1010 1015 1020

Met His Arg Lys Ser Tyr Cys Val Asp Asp Ser Asn Arg Arg Val Asp
025 1030 1035 1040

Glu Ser Leu Cys Gly Arg Glu Gln Lys Glu Ala Thr Glu Arg Glu Cys
1045 1050 1055

Asn Arg Ile Pro Cys Pro Arg Trp Val Tyr Gly His Trp Ser Glu Cys
1060 1065 1070

Ser Arg Ser Cys Asp Gly Gly Val Lys Met Arg His Ala Gln Cys Leu
1075 1080 1085

Asp Ala Ala Asp Arg Glu Thr His Thr Ser Arg Cys Gly Pro Ala Gln
1090 1095 1100

Thr Gln Glu His Cys Asn Glu His Ala Cys Thr Trp Trp Gln Phe Gly
105 1110 1115 1120

Val Trp Ser Asp Cys Ser Ala Lys Cys Gly Asp Gly Val Gln Tyr Arg
1125 1130 1135

Asp Ala Asn Cys Thr Asp Arg His Arg Ser Val Leu Pro Glu His Arg
1140 1145 1150

Cys Leu Lys Met Glu Lys Ile Ile Thr Lys Pro Cys His Arg Glu Ser
1155 1160 1165

Cys Pro Lys Tyr Lys Leu Gly Glu Trp Ser Gln Cys Ser Val Ser Cys
1170 1175 1180

Glu Asp Gly Trp Ser Ser Arg Arg Val Ser Cys Val Ser Gly Asn Gly
185 1190 1195 1200

Thr Glu Val Asp Met Ser Leu Cys Gly Thr Ala Ser Asp Arg Pro Ala
1205 1210 1215

Ser His Gln Thr Cys Asn Leu Gly Thr Cys Pro Phe Trp Arg Asn Thr
1220 1225 1230

Asp Trp Ser Ala Cys Ser Val Ser Cys Gly Ile Gly His Arg Glu Arg
1235 1240 1245

Thr Thr Glu Cys Ile Tyr Arg Glu Gln Ser Val Asp Ala Ser Phe Cys
1250 1255 1260

Gly Asp Thr Lys Met Pro Glu Thr Ser Gln Thr Cys His Leu Leu Pro
265 1270 1275 1280

Cys Thr Ser Trp Lys Pro Ser His Trp Ser Pro Cys Ser Val Thr Cys
1285 1290 1295

Gly Ser Gly Ile Gln Thr Arg Ser Val Ser Cys Thr Arg Gly Ser Glu
1300 1305 1310

Gly Thr Ile Val Asp Glu Tyr Phe Cys Asp Arg Asn Thr Arg Pro Arg
1315 1320 1325

Leu Lys Lys Thr Cys Glu Lys Asp Thr Cys Asp Gly Pro Arg Val Leu
1330 1335 1340

Gln Lys Leu Gln Ala Asp Val Pro Pro Ile Arg Trp Ala Thr Gly Pro
345 1350 1355 1360

Trp Thr Ala Cys Ser Ala Thr Cys Gly Asn Gly Thr Gln Arg Arg Leu
1365 1370 1375

Leu Lys Cys Arg Asp His Val Arg Asp Leu Pro Asp Glu Tyr Cys Asn
1380 1385 1390

His Leu Asp Lys Glu Val Ser Thr Arg Asn Cys Arg Leu Arg Asp Cys
1395 1400 1405

Ser Tyr Trp Lys Met Ala Glu Trp Glu Glu Cys Pro Ala Thr Cys Gly
1410 1415 1420

Thr His Val Gln Gln Ser Arg Asn Val Thr Cys Val Ser Ala Glu Asp
425 1430 1435 1440

Gly Gly Arg Thr Ile Leu Lys Asp Val Asp Cys Asp Val Gln Lys Arg
1445 1450 1455

Pro Thr Ser Ala Arg Asn Cys Arg Leu Glu Pro Cys Pro Lys Gly Glu
1460 1465 1470

Glu His Ile Gly Ser Trp Ile Ile Gly Asp Trp Ser Lys Cys Ser Ala
1475 1480 1485

Ser Cys Gly Gly Gly Trp Arg Arg Arg Ser Val Ser Cys Thr Ser Ser
1490 1495 1500

Ser Cys Asp Glu Thr Arg Lys Pro Lys Met Phe Asp Lys Cys Asn Glu
505 1510 1515 1520

Glu Leu Cys Pro Pro Leu Thr Asn Asn Ser Trp Gln Ile Ser Pro Trp
1525 1530 1535

Thr His Cys Ser Val Ser Cys Gly Gly Gly Val Gln Arg Arg Lys Ile
1540 1545 1550

Trp Cys Glu Asp Val Leu Ser Gly Arg Lys Gln Asp Asp Ile Glu Cys
1555 1560 1565

Ser Glu Ile Lys Pro Arg Glu Gln Arg Asp Cys Glu Met Pro Pro Cys
1570 1575 1580

Arg Ser His Tyr His Asn Lys Thr Ser Ser Ala Ser Met Thr Ser Leu
585 1590 1595 1600

Ser Ser Ser Asn Ser Asn Thr Thr Ser Ser Ala Ser Ala Ser Ser Leu
1605 1610 1615

Pro Ile Leu Pro Pro Val Val Ser Trp Gln Thr Ser Ala Trp Ser Ala
1620 1625 1630

Cys Ser Ala Lys Cys Gly Arg Gly Thr Lys Arg Arg Val Val Glu Cys
1635 1640 1645

Val Asn Pro Ser Leu Asn Val Thr Val Ala Ser Thr Glu Cys Asp Gln
1650 1655 1660

Thr Lys Lys Pro Val Glu Glu Val Arg Cys Arg Thr Lys His Cys Pro
665 1670 1675 1680

Arg Trp Lys Thr Thr Thr Trp Ser Ser Cys Ser Val Thr Cys Gly Arg
1685 1690 1695

Gly Ile Arg Arg Arg Glu Val Gln Cys Tyr Arg Gly Arg Lys Asn Leu
1700 1705 1710

Val Ser Asp Ser Glu Cys Asn Pro Lys Thr Lys Leu Asn Ser Val Ala
1715 1720 1725

Asn Cys Phe Pro Val Ala Cys Pro Ala Tyr Arg Trp Asn Val Thr Pro
1730 1735 1740

Trp Ser Lys Cys Lys Asp Glu Cys Ala Arg Gly Gln Lys Gln Thr Arg
745 1750 1755 1760

Arg Val His Cys Ile Ser Thr Ser Gly Lys Arg Ala Ala Pro Arg Met
1765 1770 1775

Cys Glu Leu Ala Arg Ala Pro Thr Ser Ile Arg Glu Cys Asp Thr Ser
1780 1785 1790

Asn Cys Pro Tyr Glu Trp Val Pro Gly Asp Trp Gln Thr Cys Ser Lys
1795 1800 1805

Ser Cys Gly Glu Gly Val Gln Thr Arg Glu Val Arg Cys Arg Arg Lys
1810 1815 1820

Ile Asn Phe Asn Ser Thr Ile Pro Ile Ile Phe Met Leu Glu Asp Glu
825 1830 1835 1840

Pro Ala Val Pro Lys Glu Lys Cys Glu Leu Phe Pro Lys Pro Asn Glu
1845 1850 1855

Ser Gln Thr Cys Glu Leu Asn Pro Cys Asp Ser Glu Phe Lys Trp Ser
1860 1865 1870

Phe Gly Pro Trp Gly Glu Cys Ser Lys Asn Cys Gly Gln Gly Ile Arg
1875 1880 1885

Arg Arg Arg Val Lys Cys Val Ala Asn Asp Gly Arg Arg Val Glu Arg
1890 1895 1900

Val Lys Cys Thr Thr Lys Lys Pro Arg Arg Thr Gln Tyr Cys Phe Glu
905 1910 1915 1920

Arg Asn Cys Leu Pro Ser Thr Cys Gln Glu Leu Lys Ser Gln Asn Val
1925 1930 1935

Lys Ala Lys Asp Gly Asn Tyr Thr Ile Leu Leu Asp Gly Phe Thr Ile
1940 1945 1950

Glu Ile Tyr Cys His Arg Met Asn Ser Thr Ile Pro Lys Ala Tyr Leu
1955 1960 1965

Asn Val Asn Pro Arg Thr Asn Phe Ala Glu Val Tyr Gly Lys Lys Leu
1970 1975 1980

Ile Tyr Pro His Thr Cys Pro Phe Asn Gly Asp Arg Asn Asp Ser Cys
985 1990 1995 2000

His Cys Ser Glu Asp Gly Asp Ala Ser Ala Gly Leu Thr Arg Phe Asn
2005 2010 2015

Lys Val Arg Ile Asp Leu Leu Asn Arg Lys Phe His Leu Ala Asp Tyr
2020 2025 2030

Thr Phe Ala Lys Arg Glu Tyr Gly Val His Val Pro Tyr Gly Thr Ala
2035 2040 2045

Gly Asp Cys Tyr Ser Met Lys Asp Cys Pro Gln Gly Ile Phe Ser Ile
2050 2055 2060

Asp Leu Lys Ser Ala Gly Leu Lys Leu Val Asp Asp Leu Asn Trp Glu
065 2070 2075 2080

Asp Gln Gly His Arg Thr Ser Ser Arg Ile Asp Arg Phe Tyr Asn Asn
2085 2090 2095

Ala Lys Val Ile Gly His Cys Gly Gly Phe Cys Gly Lys Cys Ser Pro
2100 2105 2110

Glu Arg Tyr Lys Gly Leu Ile Phe Glu Val Asn Thr Lys Leu Leu Asn
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His Val Lys Asn Gly Gly His Ile Asp Asp Glu Leu Asp Asp Asp Gly
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Phe Ser Gly Asp Met Asp
145 2150

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